SSMP Phase 1 Fish and Wildlife Habitat Monitoring and Adaptive Management Program Table of Contents

Executive Summary

Section 1 - Introduction

- 1.1 Background
- 1.2 Goals and Objectives
- 1.3 Purpose of the MAMP
- 1.4 Monitoring and Adaptive Management Approach

Plan

Design

Implement

Monitor

Evaluate

Adapt and Learn

Section 2 - Project Area

2.1 Geographic Scope

SSMP Phase 1 Created Habitat

2.2 Conceptual Understanding

Salton Sea Food Web

Hydrology and Water Quality of Saline Impoundments

Aquatic Community

Selenium

2.3 Key Questions and Uncertainties

Water Loss

Water Quality

Tolerances of Aquatic Biota

Relative Selenium Loading

Invasive and Emergent Vegetation Control

Vector Risk

Section 3 - Project Design and Operation

- 3.1 Project Design
- 3.2 Operations Scenarios

Salinity

Storage

Residence Time

Fish Stocking

3.3 Stages of Operations and Monitoring

Pond Flood-up

Aquatic Food Web Establishment

Fish Stocking and Establishment

Fish Community Persistence

Section 4 - Monitoring Approach

4.1 Purpose of Monitoring

Operations

Effectiveness

Compliance

Site Maintenance

4.2 Geographic Scope

Mudflats and Shallow Water

Mid-Depth Water

Deep Water

Permanent Vegetated Wetlands

4.3 Operational Monitoring

Inflow

Pond Stage

Outflow

Salinity

Climate Factors

Calculated Parameters

4.3 Effectiveness Monitoring

Objectives

Monitoring Category

Expected Outcomes

Indicators for Monitoring

4.4 Compliance Monitoring

Status of protected species

4.5 General Site Assessments

Section 5 - Monitoring Elements

5.1 Geography and Geology

Overview

Objectives

Key Questions and Information Needs

5.1.1 Sedimentation Rates

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

5.2 Hydrology and Water Quality

Overview

Objectives

Key Questions and Information Needs

5.2.1 Hydrology Monitoring

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

5.2.2 Water and Sediment Quality Sampling

Continuous Monitoring of Basic Water Quality

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Discrete Sampling of Water and Sediment Quality

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Selenium Sampling (Water, Sediment, and Biota)

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

5.3 Biological Resources

Overview

Objectives

Key Questions and Information Needs

5.3.1 Invertebrate Resources

Water-column zooplankton

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Water-column macroinvertebrate

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Benthic Macroinvertebrate

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

5.3.2 Fish Resources

Fish Surveys

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Similar Current Monitoring

Desert Pupfish Surveys

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Similar Current Monitoring

5.3.3 Avian Resources

Bird Surveys

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Similar Current Monitoring

Colonial Breeding Bird Surveys

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Similar Current Monitoring

5.4 Disease and Vector Control

Overview

Objectives

Key Questions and Information Needs

5.4.1 Dead and Sick Bird Counts

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Similar Current Monitoring

5.4.2 Mosquito Vectors

Purpose and Justification

Locations

Period and Frequency

Protocol and Data Collection

Section 6 - Data Management and Assessment

- 6.1 Data Management
- 6.2 Quality Control and Quality Assurance
- 6.3 Data Analysis
- 6.4 Annual Reporting
- 6.5 Monitoring Program Adjustments

Section 7 - Adaptive Management

7.1 Decision-Making Process

Purpose

Organizational Structure

Executive review

Adaptive Management Review External Service Review Operations, Maintenance and Monitoring Stakeholders

7.2 Management Responses

Project Objective
Expected Outcome
Management Triggers
Possible Management Actions

Section 8 - Acknowledgements

Section 9 - References

Literature Cited

Tables

Figures